

Environmental Protection Agency

§ 86.000–28

be followed by the Administrator. The Administrator may test the vehicles at each test point. Maintenance may be performed by the manufacturer under such conditions as the Administrator may prescribe.

(a)(9)(iii)–(b)(2) introductory text [Reserved]. For guidance see § 86.094–26.

(b)(2)(i) This paragraph (b)(2)(i) applies to service accumulation conducted under the Standard Self-Approval Durability Program of § 86.094–13(f). The manufacturer determines the form and extent of this service accumulation, consistent with good engineering practice, and describes it in the application for certification. Service accumulation under the Standard Self-Approval Durability Program is conducted on vehicles, engines, sub-systems, or components selected by the manufacturer under § 86.000–24(c)(2)(i).

(ii) This paragraph (b)(2)(ii) applies to service accumulation conducted under the Alternative Service Accumulation Durability Program of § 86.094–13(e). The service accumulation method is developed by the manufacturer to be consistent with good engineering practice and to accurately predict the deterioration of the vehicle's emissions in actual use over its full useful life. The method is subject to advance approval by the Administrator and to verification by an in-use verification program conducted by the manufacturer under § 86.094–13(e)(5).

(b)(2)(iii)–(b)(4)(i)(C) [Reserved]. For guidance see § 86.094–26.

(b)(4)(i)(D)–(b)(4)(ii)(D) [Reserved]. For guidance see § 86.095–26.

(b)(4)(iii) [Reserved]

(b)(4)(iv)–(c)(3) [Reserved]. For guidance see § 86.094–26.

(c)(4) [Reserved]. For guidance see § 86.096–26.

(d) introductory text through (d)(2)(i) [Reserved]. For guidance see § 86.094–26.

(d)(2)(ii) The results of all emission tests shall be recorded and reported to the Administrator. These test results shall be rounded, in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1), to the number of decimal places contained in the applicable

emission standard expressed to one additional significant figure.

(d)(3)–(d)(6) [Reserved]. For guidance see § 86.094–26.

[61 FR 54883, Oct. 22, 1996]

§ 86.000–28 Compliance with emission standards.

Section 86.000–28 includes text that specifies requirements that differ from § 86.094–28 or § 86.098–28. Where a paragraph in § 86.094–28 or § 86.098–28 is identical and applicable to § 86.000–28, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.094–28.” or “[Reserved]. For guidance see § 86.098–28.”

(a)(1) This paragraph (a) applies to light duty vehicles.

(2) Each exhaust, evaporative and refueling emission standard (and family particulate emission limits, as appropriate) of § 86.000–8 applies to the emissions of vehicles for the appropriate useful life as defined in §§ 86.000–2 and 86.000–8.

(a)(3) [Reserved]. For guidance see § 86.094–28.

(a)(4) Introductory text [Reserved]. For guidance see § 86.098–28.

(a)(4)(i) Separate emission deterioration factors for each regulated exhaust constituent shall be determined from the FTP exhaust emission results of the durability-data vehicle(s) for each engine-system combination. Unless the Administrator approves a manufacturer's request to develop specific deterioration factors for US06 and air conditioning (SC03) test results, applicable FTP deterioration factors will also be used to estimate intermediate and full useful life emissions for all SFTP regulated emission levels. Separate evaporative and/or refueling emission deterioration factors shall be determined for each evaporative/refueling emission family-emission control system combination from the testing conducted by the manufacturer (gasoline-fueled and methanol-fueled vehicles only). Separate refueling emission deterioration factors shall be determined for each evaporative/refueling emission family-emission control system combination from the testing conducted by the manufacturer (petroleum-fueled diesel

cycle vehicles not certified under the provisions of § 86.098–28(g) only).

(a)(4)(i)(A)–(a)(4)(i)(B)(2)(i) [Reserved]. For guidance see § 86.094–28.

(a)(4)(i)(B)(2)(ii) These interpolated values shall be carried out to a minimum of four places to the right of the decimal point before dividing one by the other to determine the deterioration factor. The results shall be rounded to three places to the right of the decimal point in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(a)(4)(i)(B)(2)(iii)–(a)(4)(i)(B)(2)(iv) [Reserved]. For guidance see § 86.094–28.

(a)(4)(i)(C)–(a)(4)(i)(D)(2) [Reserved]. For guidance see § 86.098–28.

(a)(4)(ii)(A)(I) The official exhaust emission test results for each applicable exhaust emission standard for each emission data vehicle at the selected test point shall be multiplied by the appropriate deterioration factor: *Provided*, that if a deterioration factor as computed in paragraph (a)(4)(i)(B)(2)(ii) of this section is less than one, that deterioration factor shall be one for the purposes of this paragraph. For the SFTP composite standard of (NMHC+NO_x), the measured results of NMHC and NO_x must each be multiplied by their corresponding deterioration factors before the composite (NMHC+NO_x) standard is calculated.

(2) The calculation specified in paragraph (a)(4)(ii)(A)(I) of this section may be modified with advance approval of the Administrator for engine-system combinations which are certified under the Alternative Service Accumulation Durability Program specified in § 86.094–13(e).

(a)(4)(ii)(B)–(a)(4)(ii)(C) [Reserved]. For guidance see § 86.098–28.

(a)(4)(iii) The emissions to compare with the standard (or the family particulate emission limit, as appropriate) shall be the adjusted emissions of § 86.098–28 (a)(4)(ii)(B) and (C) and paragraph (a)(4)(ii)(A) of this section 211a for each emission-data vehicle. For the SFTP composite (NMHC+NO_x) results, the individual deterioration factors must be applied to the applicable

NMHC and NO_x test results prior to calculating the adjusted composite (NMHC+NO_x) level that is compared with the standard. The additional composite calculations that are required by the SFTP are discussed in § 86.164–00 (Supplemental federal test procedure calculations). Before any emission value is compared with the standard (or the family particulate emission limit, as appropriate), it shall be rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29–90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1). The rounded emission values may not exceed the standard (or the family particulate emission limit, as appropriate).

(a)(4)(iv) [Reserved]. For guidance see § 86.094–28.

(a)(4)(v) [Reserved]. For guidance see § 86.098–28.

(a)(5)–(a)(6) [Reserved]. For guidance see § 86.094–28.

(a)(7) introductory text [Reserved]. For guidance see § 86.098–28.

(a)(7)(i) Separate deterioration factors shall be determined from the exhaust emission results of the durability data vehicles for each emission standard applicable under § 86.000–8, for each engine family group. Unless the Administrator approves a manufacturer's request to develop specific deterioration factors for US06 and air conditioning (SC03) test results, applicable deterioration factors determined from FTP exhaust emission results will also be used to estimate intermediate and full useful life emissions for all SFTP regulated emission levels. The evaporative and/or refueling emission deterioration factors for each evaporative/refueling family will be determined and applied in accordance with § 86.098–28 (a)(4) introductory text, (a)(4)(i)(C) and (D), (a)(4)(ii)(B) and (C), and (a)(4)(v) and § 86.094–28 (a)(4)(i)(A)–(a)(4)(i)(B)(2)(i), (a)(4)(i)(B)(2)(iii) and (iv), and (a)(4)(iv) and paragraphs (a)(4)(i) introductory, (a)(4)(i)(B)(2)(ii), (a)(4)(ii)(A), and (a)(4)(iii) of this section.

(a)(7)(ii)–(b)(4)(i) [Reserved]. For guidance see § 86.094–28.

(b)(4)(ii) Separate exhaust emission deterioration factors for each regulated exhaust constituent, determined from tests of vehicles, engines, subsystems, or components conducted by the manufacturer, shall be supplied for each standard and for each engine-system combination. Unless the Administrator approves a manufacturer's request to develop specific deterioration factors for US06 and air conditioning (SC03) test results, applicable deterioration factors determined from FTP exhaust emission results will also be used to estimate intermediate and full useful life emissions for all SFTP regulated emission levels.

(iii) The official exhaust emission results for each applicable exhaust emission standard for each emission data vehicle at the selected test point shall be adjusted by multiplication by the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than one, it shall be one for the purposes of this paragraph (b)(4)(iii).

(iv) The emissions to compare with the standard(s) (or the family particulate emission limit, as appropriate) shall be the adjusted emissions of paragraph (b)(4)(iii) of this section for each emission-data vehicle. For the SFTP composite (NMHC+NO_x) results, the individual deterioration factors must be applied to the applicable NMHC and NO_x test results prior to calculating the adjusted composite (NMHC+NO_x) level that is compared with the standard. The additional composite calculations that are required by the SFTP are discussed in § 86.164-00 (Supplemental federal test procedure calculations). Before any emission value is compared with the standard, it shall be rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(5)(i) Paragraphs (b)(5)(i) (A) and (B) of this section apply only to manufacturers electing to participate in the particulate averaging program.

(A) If a manufacturer chooses to change the level of any family particulate emission limit(s), compliance with

the new limit(s) must be based upon existing certification data.

(B) The production-weighted average of the family particulate emission limits of all applicable engine families, rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1), must comply with the particulate standards in § 86.099-9 (a)(1)(iv) or (d)(1)(iv), or the composite particulate standard as defined in § 86.094-2, as appropriate, at the end of the product year.

(ii) Paragraphs (b)(5)(ii) (A) and (B) of this section apply only to manufacturers electing to participate in the NO_x averaging program.

(A) If a manufacturer chooses to change the level of any family NO_x emission limit(s), compliance with the new limit(s) must be based upon existing certification data.

(B) The production-weighted average of the family FTP NO_x emission limits of all applicable engine families, rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1), must comply with the NO_x standards of § 86.099-9(a)(1)(iii) (A) or (B), or the composite NO_x standard as defined in § 86.094-2, at the end of the product year.

(b)(6) [Reserved]

(b)(7)(i)-(b)(7)(iii) [Reserved]. For guidance see § 86.094-28.

(b)(7)(iv) The emission value for each evaporative emission data vehicle to compare with the standards shall be the adjusted emission value of § 86.094-28 (b)(7)(iii) rounded to two significant figures in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(b)(8)-(c)(4)(iii)(B)(3) [Reserved]. For guidance see § 86.094-28.

(c)(4)(iv) The emission values for each emission data engine to compare

with the standards (or family emission limits, as appropriate) shall be the adjusted emission values of § 86.094-28 (c)(4)(iii), rounded to the same number of significant figures as contained in the applicable standard in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

(c)(5)-(d)(4) [Reserved]. For guidance see § 86.094-28.

(d)(5) The emission level to compare with the standard shall be the adjusted emission level of § 86.094-28 (d)(4). Before any emission value is compared with the standard it shall be rounded to two significant figures, in accordance with the Rounding-Off Method specified in ASTM E29-90, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1). The rounded emission values may not exceed the standard.

(6) Every test vehicle of an evaporative emission family must comply with the evaporative emission standard, as determined in paragraph (d)(5) of this section, before any vehicle in that family may be certified.

(e)-(h) [Reserved]. For guidance see § 86.098-28.

[61 FR 54884, Oct. 22, 1996]

§ 86.001-1 General applicability.

(a) The provisions of this subpart generally apply to 2001 and later model year new Otto-cycle and diesel-cycle heavy-duty engines. In cases where a provision applies only to a certain vehicle group based on its model year, vehicle class, motor fuel, engine type, or other distinguishing characteristics, the limited applicability is cited in the appropriate section or paragraph. The provisions of this subpart continue to generally apply to 2000 and earlier model year new Otto-cycle and diesel-cycle light-duty vehicles and 2000 and earlier model year new Otto-cycle and diesel-cycle light-duty trucks produced. Provisions generally applicable to all 2001 and later model year new Otto-cycle and diesel-cycle light-duty vehicles and 2001 and later model year

new Otto-cycle and diesel-cycle light-duty trucks are located in Subpart S of this part.

(b) *Optional applicability.* (1) A manufacturer may request to certify any heavy-duty vehicle of 14,000 pounds Gross Vehicle Weight Rating or less in accordance with the light-duty truck provisions located in subpart S of this part through the 2004 model year (through the 2003 model year for manufacturers choosing Otto-cycle HDE Option 2 in § 86.005-1(c)(2), or through the 2002 model year for manufacturers choosing Otto-cycle HDE Option 1 in § 86.005-1(c)(1)). Heavy-duty engine or vehicle provisions of this subpart A do not apply to such a vehicle.

(2) Beginning with the 2000 model year, a manufacturer may certify any Otto-cycle heavy-duty vehicle of 14,000 pounds Gross Vehicle Weight Rating or less in accordance with the provisions for Otto-cycle complete heavy-duty vehicles located in subpart S of this part for purposes of generating credits in the heavy-duty vehicle averaging, banking, and trading program contained in § 86.1817-05. Heavy-duty engine or heavy-duty vehicle provisions of this subpart A do not apply to such a vehicle.

(c)-(d) [Reserved]

(e) *Small volume manufacturers.* Special certification procedures are available for any manufacturer whose projected combined U.S. sales of light-duty vehicles, light-duty trucks, heavy-duty vehicles, and heavy-duty engines in its product line (including all vehicles and engines imported under the provisions of §§ 85.1505 and 85.1509 of this chapter) are fewer than 10,000 units for the model year in which the manufacturer seeks certification. To certify its product line under these optional procedures, the small-volume manufacturer must first obtain the Administrator's approval. The manufacturer must meet the eligibility criteria specified in § 86.092-14(b) before the Administrator's approval will be granted. The small-volume manufacturer's certification procedures are described in § 86.092-14.

(f) *Optional procedures for determining exhaust opacity.* (1) The provisions of subpart I of this part apply to tests